

5/375,819
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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/378,819	01/27/95	ENOKIDA	M 35.C10457

24M1/1210
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EXAMINER

HONG, S

ART UNIT PAPER NUMBER

2412

10

DATE MAILED: 12/10/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

Responsive to communication(s) filed on 5-28-96; 10-17-95 (IDS)
 This action is FINAL.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

Claim(s) 1 — 13, 24 — 37 and 39 is/are pending in the application.
Of the above, claim(s) NONE is/are withdrawn from consideration.
 Claim(s) _____ is/are allowed.
 Claim(s) 1 — 13, 24 — 37 and 39 is/are rejected.
 Claim(s) _____ is/are objected to.
 Claims _____ are subject to restriction or election requirement.

Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
 The drawing(s) filed on _____ is/are objected to by the Examiner.
 The proposed drawing correction, filed on 5-28-96 is approved disapproved.
 The specification is objected to by the Examiner.
 The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
 All Some* None of the CERTIFIED copies of the priority documents have been received.
 received in Application No. (Series Code/Serial Number) _____
 received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

Notice of Reference Cited, PTO-892
 Information Disclosure Statement(s), PTO-1449, Paper No(s). 1 page
 Interview Summary, PTO-413
 Notice of Draftsperson's Patent Drawing Review, PTO-948
 Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Part III DETAILED ACTION

1. This action is responsive to communications: amendment filed 2/28/96 to the application, filed 1/27/95; prior art filed 10/17/95.
2. In the amendment claims 14-23 and 38 have been cancelled. Accordingly, claims 1-13, 24-37 and 39 are pending in the case. Claims 1, 5, 24, 29, 36-37 and 39 are independent claims.
3. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 5/28/96 have been approved by Examiner. Accordingly, the objection to the drawings for lacking a legend such as "Prior Art" has been withdrawn.
4. The objections to the title and the abstract of the invention have been withdrawn in view of the amendments.
5. The objections to claims 2, 7 and 14 have been withdrawn in view of the corrections for claims 2 and 7 and in view of the cancellation of claim 14 in the amendment.
6. The rejection of claims 8, 10 and 12 under 35 U.S.C. § 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim has been withdrawn pursuant to Applicant's remark that the rejection was fatally flawed.
7. The rejection of claims 14-23, 18 and 35 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite has been withdrawn in view of the amendment.

8. The rejections of claims 14-23 under 35 U.S.C. § 103 as being unpatentable over Laney et al. in view of Nguyen and claims 38 under 35 U.S.C. § 103 as being unpatentable over Sugiyama in view of Nguyen have been withdrawn, since the claims have been cancelled in the amendment.

Priority

9. Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

Specification

10. Acknowledgement is made of the Applicant's efforts in correcting the informalities in the specification. Accordingly, Examiner has withdrawn the requirement for a substitute specification. However, Examiner requests that Applicant further review the application carefully for informalities.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

12. Claims 1-4 and 36 remain rejected under 35 U.S.C. § 103 as being unpatentable over Sugiyama, U.S. Pat. No. 5,315,326, 5/94 in view of Nguyen, U.S. Pat. No. 5,404,437, 4/95 (filed 11/92).

As per independent claim 1, Sugiyama discloses **decoding encoded animating image data** (col.4, line 9, "...detecting ...pixel of an image ...where interframe or interfield processing is carried out""); **intraframe coding and storing** (col.4, lines 11-19; and col.3, lines 48-53, "independently coding respective frames ...so that respective frames can be independently handled"). However, Sugiyama does not disclose an editing means for arbitrary edition. That feature is shown by Nguyen (col.2, lines 3-11, "An animation sequence generator decompresses and stores information representing the pixel data ...synchronizes the animation sequence..."). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have used Nguyen's apparatus to edit the animation data of Sugiyama, since Sugiyama has pointed out that intraframe coded images "mak[e] it possible to easily carry out ... random access, high speed search or image editing in media of the storage system (col.3, lines 54-57)." The limitation of **coding the edited frame** would have been obvious to one of ordinary skill in the art at the time the invention was made, because if the edited images were to be stored away for later use, the

images had to be stored in a compressed format (such as shown by Sugiyama) to save memory space.

With respect to the newly added limitation, Sugiyama further shows **decoding moving image data encoded by an encoding method that includes encoding in which intraframe correlation is considered** (col.5, line 21, "Since respective frames are independently coded..." shows that each frame is coded with intraframe correlation, and not interframe correlation.).

As per dependent claim 2, Sugiyama discloses that the **animating image data is transmitted from an external apparatus by communication** (Fig.4, item 17 shows that the data come from external apparatus).

As per dependent claim 3, Nguyen discloses **an edition in a time base direction between frames** (col.7, line 17-20, "a timing diagram showing synchronization ..."). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined the teaching of Sugiyama and Nguyen, since the image data of Sugiyama also represented animation frames that are organized in time based sequences.

As per dependent claim 4, Sugiyama discloses **displaying the decoded image data** (in Abstract, line 3, "...image editing necessary ...in a processing system for ...displaying ...").

Independent claim 36 is for method performed by the apparatus in claim 1, and is similarly rejected under the same rationale.

13. Claims 5-13 and 37 remain rejected and claims 24-28 and 39 are rejected under 35 U.S.C. § 103 as being unpatentable over Sugiyama in view of Nguyen as applied to claim 1, and further in view of Normille et al., U.S. Pat. No. 5,267,334, 11/93.

As per independent claim 5, Normille discloses **detecting an intraframe** (col.7, line 59, "detecting a first scene ...known, in a preferred embodiment, as a ...intra frame"); and **decoding the image and a predetermined number of frames after the detected image** (col.7, line 66, "generating at least one intermediate compressed frame...containing difference information from the first image for at least one image following the first image in time in the sequence of moving images"), but does not disclose **arbitrary editing and encoding the edited frame images**. However, those limitations are disclosed by Sugiyama and Nguyen with respect to claim 1 and their rationale is incorporated herein. Further, Normille does not explicitly disclose that the images are decoded. But, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have decoded the images, since Nguyen showed the displaying of the images, which would have required the images to be decoded. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined the teaching of Normille and Nguyen, since Normille's apparatus linked the frames to create forward and backward play (col.8, lines 9-16), and Nguyen provided the apparatus for performing the frame edition.

As per the newly added limitation of decoding the moving image data of a predetermined number of frames including images to be edited by using the frame detected by the intraframe detecting means. Nevertheless, including the image to be edited in the

decoded frames would have been obvious to a person of ordinary skill in the art at the time the invention was made, since Sugiyama disclosed the motivation by teaching that "[in] editing..., it is necessary that respective frames are independent....such that the interframe prediction is unable to be used (col.3, line 27)." In other words, since Normille disclosed the interframe coded set of frames, Sugiyama pointed out that they must be decoded into independent frames before editing take place.

As per dependent claim 6, Normille and Nguyen do not disclose that the intraframe encoded images after edited is recorded and stored in intraframe coding. However, this would have been an obvious step to one of ordinary skill in the art, since if the frames were not displayed at the time, they should have been stored in the compressed format to reduce storage requirement.

Dependent claims 7 and 8 recite substantially similar limitations as those in claim 2, and are similarly rejected under the same rationale.

Dependent claims 9 and 10 recite substantially similar limitations as those in claim 3, and are similarly rejected under the same rationale.

As per dependent claims 11 and 12, Nguyen discloses decoding **from the intraframe just before the frame to be edited** (decoding the intraframe is shown in the rejection of claim 1, which is herein incorporated; and in Nguyen, col.2, line 3, "...generator decompresses and stores ..." shows the decoding before the editing.). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have

incorporated Nguyen's feature of decoding just before editing, since decoded data that were not to be used right away would have taken excessive memory storage.

Dependent claim 13 recites substantially similar limitations as those in claim 4, and is similarly rejected under the same rationale.

Independent claim 24 recites basically the same limitations as those in claim 1, and the similar rejections are rejected under the same rationale. In addition, claim 24 cites **decoding interframe coded image data in parallel with encoding intraframe image data**. First, parallel processing and multi-tasking were well known technique in the art. Given that, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have performed the encoding and decoding in parallel, since when compressed data were decoded, the size of data increase greatly. Therefore, if all image data were decoded before they were encoded, the memory required to store the data would have been unpractically large.

Furthermore, as the newly added limitation of displaying the decoded image data so that an order of frame image forming the moving image data can be identified, Normille disclose the feature (see FIG.7a). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated the teaching of Normille, since Normille disclosed that the decoding of interframe coded frame require the sequential set of ordered frames (also see col.13, lines 56+).

Dependent claim 25 contains substantially similar limitation as claim 4, and is similarly rejected.

Dependent claim 26 recites substantially similar limitation as the one in claim 1, and is similarly rejected.

As per dependent claim 27, the means for accumulating animating images would have been obvious to one of ordinary skill in the art at the time the invention was made, since animation required multiple frames, and Sugiyama explained that interframe coding was useful in reducing the size of the data (col.3, line 14, "an interframe predictive coding ...the efficiency is high").

As per dependent claim 28, Sugiyama does not disclose a computer program. But, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have implemented Sugiyama's apparatus with computer program, since one of ordinary skill in the art would have known that software implementation would have been less expensive.

Independent claims 37 and 39 are for method performed by the apparatus in claims 5 and 24, respectively, and are similarly rejected under the same rationale.

14. Claims 29-35 are rejected under 35 U.S.C. § 103 as being unpatentable over Sugiyama, in view of Nguyen as applied to claim 1 and further in view of Normille and Laney et al., U.S.Pat. No.5,467,134, 11/95 (filed 12/93), 348/409.

Independent claim 29 recites substantially similar limitations as independent claims 1, and is similarly rejected under the same rationale. However, claim 29 differs from claim 1 in that it further contains the encoding means for intraframe encoding the frame images of the

minimum number which are necessary to decode the moving image data instructed by said instructing means in the moving image data stored in the memory. Laney disclose the limitations (Fig.2, and col.8, lines 17-68). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have combined Nguyen's editing apparatus to edit images and compress them using Laney's method, since Laney has pointed out that "using both intraframe and interframe compression techniques (col.2, line 10)" can "satisfactorily compress video, or for playback at a given data rate (col.2, line 4)."

In other words, by employing both intraframe and interframe compression techniques, the animation could have been produced that can satisfy both compression and playback rate (as explained in claim 14).

Furthermore, as the newly added limitation of displaying the decoded image data so that an order of frame image forming the moving image data can be identified, Normille disclose the feature (see FIG.7a). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated the teaching of Normille, since Normille disclosed that the decoding of interframe coded frame require the sequential set of ordered frames (also see col.13, lines 56+).

As per dependent claim 30, Laney does not explicitly state that the encoding methods are computer programs. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have implemented Laney's encoding steps in computer programs, since Laney disclosed the computer which is used to display the animation (col.1, lines 18-23).

As per dependent claim 31, Nguyen discloses a cutting process in editing (col.7, lines 5-16 describe a cut and paste routine on the images, as produced by the overlay.).

As per dependent claims 33 and 34, Nguyen discloses animation images displayed in multi-screen displays that are obtained by reducing the frame images (FIG.9 and col.9, lines 15-30).

As per dependent claim 32, Sugiyama, Laney, and Nguyen do not explicitly state that the interframe coding uses MPEG coding. However, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have used MPEG coding for the interframe coding, since Applicant disclosed in the Background of Invention (page 1), that MPEG coding was an international standard for motion video interframe compression.

As per dependent claim 35, Sugiyama, Laney, and Nguyen do not explicitly state that the frames created are created without a broken link. However, Normille disclosed that the frames are linked without the broken link (cols.7 and 8, in Summary and Objects of the Invention). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have incorporated the teaching of Normille, since Normille explained that the linked frames enabled the reverse play and forward play in animation.

Response to Amendment

15. Applicant's arguments with respect to claims 1-13, 24-37 and 39 have been considered but are deemed to be moot in view of the new grounds of rejection.

Although the same previously cited prior art have been applied, the newly added limitations necessitated that Examiner point out other relevant portions in the prior art and introduce new rationale in the rejections.

The newly added limitations that necessitated the new grounds of rejection include: in claim 1, lines 3-5, 12-14, "...encoded by an encoding method that includes encoding in which intraframe correlation is considered.."; in claim 5, lines 4-6, similar to claim 1 and also in line 9, "...including images to be edited by using the frame..."; in claim 24, lines 1-4, 7-8, 14-19; in claim 29, lines 6-8.

Conclusion

16. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

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17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Hong whose telephone number is (703) 308-5465. The examiner can normally be reached on Monday-Friday from 8:00 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Heather Herndon, can be reached on (703) 305-9701. The fax phone number for this group is (703) 305-9724.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3800.

Stephen Hong
Stephen Hong

Patent Examiner

December 9, 1996

Heather Herndon
HEATHER R. HERNDON
SUPERVISORY PATENT EXAMINER
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